

Amendments to the Claims:

Claims 1-36 are pending in this application. claims 1, 8, 18, 31 and 32 are independent. Claims 1, 7, 8, 18, 31 and 32 are herein amended. No new matter has been added.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A projection type display apparatus comprising:

a display device;

including a projection optical system for projecting image light from a the display device onto a surface to be projected, the projection optical system having light amount adjusting means capable of substantially uniformly attenuating said image light in the cross-section thereof on the surface to be projected,

wherein said attenuating is light amount adjusting means attenuates the image light based on an input image signal to the display device.

2. (Original) An apparatus according to claim 1, wherein said light amount adjusting means has a variable stop comprising a plurality of tiltable light intercepting plates arranged in said cross-section.

3. (Original) An apparatus according to claim 1, wherein said light amount adjusting means has a variable stop comprising a plurality of displaceable light intercepting plates arranged in said cross-section.

4. (Original) An apparatus according to claim 1, wherein said light amount adjusting means has ND filter means variable in transmittance.

5. (Original) An apparatus according to claim 1, wherein said light amount adjusting means has a stop variable in aperture diameter.

6. (Previously Presented) An apparatus according to claim 1, wherein a write signal to said display device is modulated in synchronism with the adjustment of the amount of light by said light amount adjusting means so that dynamic range about luminance may change.

7. (Currently Amended) An apparatus according to claim 1, wherein said display device includes a light modulating element and illuminating means for illuminating said light modulating element with light from a light source, and said illuminating means has a first optical system for forming a ~~plurality~~ plurality of light source images by the light from said light source, and a second optical system for superimposing the beams from said plurality of light source images on said light modulating element, and said light amount adjusting means is disposed at a position whereat said plurality of light source images are projected.

8. (Currently Amended) A projection type display apparatus comprising:
a projection optical system for projecting image light from a display device;
light amount adjusting means for adjusting the amount of said image light; and

control means for attenuating the amount of light of the whole of said image light by said light amount adjusting means and modulating a write signal to said display device so that dynamic range about luminance may be expanded, wherein said attenuating is light amount adjusting means attenuates said image light based on an input image signal to the display device.

9. (Original) An apparatus according to claim 8, wherein said light amount adjusting means substantially uniformly attenuates said image light in the cross-section thereof.

10. (Original) An apparatus according to claim 9, wherein said light amount adjusting means has a variable stop comprising a plurality of tilttable light intercepting plates arranged in said cross-section.

11. (Original) An apparatus according to claim 9, wherein said light amount adjusting means has a variable stop comprising a plurality of displaceable light intercepting plates arranged in said cross-section.

12. (Original) An apparatus according to claim 9, wherein said light amount adjusting means has ND filter means variable in transmittance.

13. (Original) An apparatus according to claim 8, wherein said light amount adjusting means has a stop variable in aperture diameter.

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14. (Previously Presented) An apparatus according to claim 8, wherein said light amount adjusting means is disposed at a pupil position of said projection optical system.

15. (Previously Presented) An apparatus according to claim 8, wherein said display device includes a light modulating element driven in conformity with an image signal, and illuminating means for illuminating said light modulating element with light from a light source, and said illuminating means has a first optical system for forming a plurality of light source images by the light from said light source, and a second optical system for superimposing beams from said plurality of light source images on said light modulating element, and said light amount adjusting means is disposed between said first and second optical system whereat said plurality of light source images are projected.

16. (Previously Presented) An apparatus according to claim 15, wherein said illuminating means has a color filter at a condensing point of the light from the light source.

17. (Previously Presented) An apparatus according to claim 15, wherein said light amount adjusting means is disposed at a pupil position of said projection optical system.

18. (Currently Amended) A projection type display apparatus comprising:
a light modulating element for controlling transmitted or reflected state of light to thereby display a gradation image;

an illuminating device for applying light to said light modulating element;
a projection optical system for projecting the transmitted light or reflected light of
the light applied to said light modulating element;

write signal processing means for modulation-processing a write signal to said
light modulating element;

projection light amount control means for controlling the amount of light in the
optical path between an optical type integrator of said illuminating device to said projection
optical system; and

control signal generating means for controlling said write signal processing means
and said projection light amount control means;

wherein said control signal generating means generates a control signal on the
basis of the luminance level of an input image signal to said light modulating element so as to
make the amount of projection light great and the modulation of the write signal small when said
luminance level is high, and to make the amount of projection light small and the modulation of
the write signal great when said luminance level is low.

19. (Previously Presented) An apparatus according to claim 18, wherein said projection light
amount control means adjusts the amount of light in the optical path between said illuminating
device and said light modulating element and/or between said light modulating element and said
projection optical system.

20. (Original) An apparatus according to claim 18, wherein said projection light amount control means uniformly intercepts a light source image formed by said optical type integrator.

21. (Previously Presented) An apparatus according to claim 18, wherein said projection optical system is comprised of a so-called schlieren optics.

22. (Original) An apparatus according to claim 18, wherein said projection light amount control means has movable stop means and stop driving means.

23. (Original) An apparatus according to claim 18, wherein said projection light amount control means is disposed at a position which is not in conjugate relationship with said light modulating element.

24. (Original) An apparatus according to claim 18, wherein said projection light amount control means controls the amount of stop in conformity with the luminance level of the input image signal.

25. (Previously Presented) An apparatus according to claim 18, wherein movable stop means of said projection light amount control means is a stripe stop, and driving means is a cam motor or an ultrasonic motor.

26. (Original) An apparatus according to claim 18, wherein said control signal generating means has luminance level calculation means for calculating the luminance level of the input image signal, and projection light amount calculation means for calculating the amount of projection light emerging from the projection optical system in conformity with said calculated luminance level, and generates the control signal of said projection light amount control means on the basis of the amount of projection light calculated in said projection light amount calculation means, and generates the control signal of said write signal processing means on the basis of the luminance level calculated in said luminance level calculation means and said calculated amount of projection light.

27. (Previously Presented) An apparatus according to claim 18, wherein luminance level calculation means calculates the maximum value of the luminance signal of each pixel in each field or each frame of an image signal as maximum luminance.

28. (Previously Presented) An apparatus according to claim 18, wherein luminance level calculation means calculates the cumulative histogram of the luminance signal of each pixel in each field or each frame of an image signal, and calculates a luminance level at which said cumulative histogram becomes constant or greater as maximum luminance.

29. (Original) An apparatus according to claim 18, wherein said write signal processing means modulates the write signal so as to amplify it at an amplification factor substantially inversely

proportional to said amount of projection light.

30. (Previously Presented) An apparatus according to claim 18, wherein said projection light amount control means is disposed at the pupil position of said projection optical system.

31. (Currently Amended) A projection type display apparatus comprising:

a display device illuminated by light from a light source;

a projection optical system for projecting an image light from a said display device onto a screen surface to be projected; and

light amount control adjusting means for substantially uniformly intercepting a light source attenuating the image light projected onto the surface to be projected by attenuating the image light at the pupil position of said projection optical system where an image of the light source is projected,

wherein said intercepting is light amount adjusting means attenuates the image light based on an input image signal to the said display device.

32. (Currently Amended) A projection optical system for projecting image light from a display device onto a surface to be projected, said projection optical system having comprising:

light amount adjusting means capable of substantially uniformly attenuating said image light in the cross section thereof on the surface to be projected,

wherein said attenuating is light amount adjusting means attenuates the image

light based on an input image signal to the display device.

33. (Original) A system according to claim 32, wherein said light amount adjusting means has a variable stop comprising a plurality of tiltable light intercepting plates arranged in said cross-section.

34. (Original) A system according to claim 32, wherein said light amount adjusting means has a variable stop comprising a plurality of displaceable light intercepting plates arranged in said cross-section.

35. (Original) A system according to claim 32, wherein said light amount adjusting means has ND filter means variable in transmittance.

36. (Original) A system according to claim 32, wherein said light amount adjusting means has a stop variable in aperture diameter.